AMENDED CLAIM SET:

1. (withdrawn) A preform mold apparatus for brake friction components, which apparatus comprises:

a constraint fixture having a bottom plate and an internal area corresponding in shape to the shape of a desired preform, said internal area being defined by a perforated annular ejector plate, an inner wall, an outer wall, and a perforated annular top plate;

locking means to maintain the top plate in place in the constraint fixture; and

means for lifting the constraint fixture out of the mold apparatus.

2. (cancelled).

3. (withdrawn) The apparatus of claim 1, wherein the bottom plate comprises holes to facilitate ejection of the ejector plate.

4. (cancelled).

5. (withdrawn) The apparatus of claim 1, wherein said locking means comprises a plurality of locking cams.

6. (withdrawn) The apparatus of claim 1, further comprising annular inner and outer filling rings to facilitate loading of the mold with fibrous materials.

7. (cancelled).

8. (withdrawn) The apparatus of claim 1, wherein said lifting means comprises an eyebolt fixed in a hole in the bottom plate.

9. (currently amended) A method of manufacturing preforms for brake friction components, which method comprises the steps of:

providing ~~in the absence of binders, placing carbon fiber materials comprising loose fibers, and optionally fillers and/or additives into~~ a constraint fixture having a bottom plate and an internal area corresponding in shape to the shape of a desired preform, said internal area being defined by a perforated annular ejector plate, an inner wall, an outer wall, and a perforated annular top plate in a mold apparatus,

chopping continuous fiber tow to produce loose fibers,

in the absence of binders, spraying carbon fiber materials comprising said loose fibers, and optionally fillers and/or additives into said constraint fixture,

compressing said carbon fiber materials at a pressure of about 3-10 atmospheres to form a fibrous matrix and to compact them to a density suitable for densification,

removing the constraint fixture containing the compacted fibrous materials from the mold apparatus, and

subjecting said materials in said constraint fixture to densification by one or more of Resin Transfer Molding, resin or pitch infiltration, and Carbon Vapor Deposition to produce a brake friction component preform.

10. (cancelled).

11. (cancelled).

12. (currently amended) The method of claim 9 ~~11~~, further comprising the step of lining said constraint fixture with a veil prior to spraying the chopped fibers into said constraint fixture.

13. (cancelled).

14. (cancelled).

15. (original) The method of claim 9, wherein said brake friction component preform is configured as an aircraft landing system brake disc.

16. (previously presented) The method of claim 9, wherein said mold apparatus comprises locking means to maintain the top plate in place in the constraint fixture and means for lifting the constraint fixture out of the mold apparatus.

17. (new) A method of manufacturing preforms for brake friction components, which method comprises the steps of

in the absence of binders, placing carbon fiber materials comprising loose fibers, and optionally fillers and/or additives into a constraint fixture having a bottom plate and an internal area corresponding in shape to the shape of a desired preform, said internal area being defined by a perforated annular ejector plate, an inner wall, an outer wall, and a perforated annular top plate in a mold apparatus,

compressing said carbon fiber materials to form a fibrous matrix,

removing the constraint fixture containing the compacted fibrous materials from the mold apparatus, and

subjecting said materials in said constraint fixture to densification by Resin Transfer Molding, to produce a brake friction component preform.

18. (new) The method of claim 17, wherein the Resin Transfer Molding step comprises preheating the compacted fibrous materials to a temperature between about 290°C and 425°C and heating the mold to a temperature between about 280°F and 590°F.